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CONTENTS.

Page.

EDITORIAL NOTES & COMMENTS—Our Home Letter—Modern Printing Process—Our Illustration—Advice on Photographing a Landscape—The Value and Use of Stops.. 126

ORIGINAL ARTICLE—Collodio Bromide for Transparencies 129

OUR HOME LETTER........... 131

PROCEEDINGS OF THE SOCIETY........ 132

CORRESPONDENCE........ 133

ANSWERS TO CORRESPONDENTS........ 134

ABSTRACTS—Guide Marks on the Ground Glass—A Fixing Bath—A Continuous Toning Bath for Gelatine Prints—The Toning Bath—Bubbles in Lenses—Mountants and Mounting Brushes........ 134

EW APPARATUS—The New Cooke Lenses........ 135

TRACTS—The Treatment of Gelatino-Chloride Paper—Suggestions for Improvement of Defective Negatives........ 136

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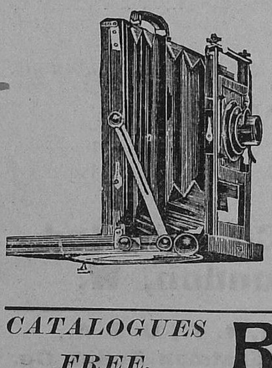

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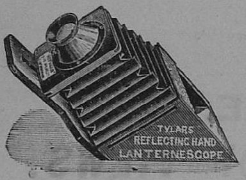

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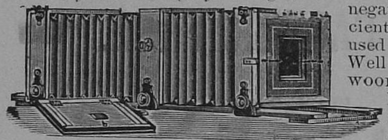

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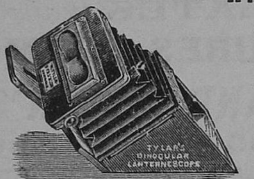

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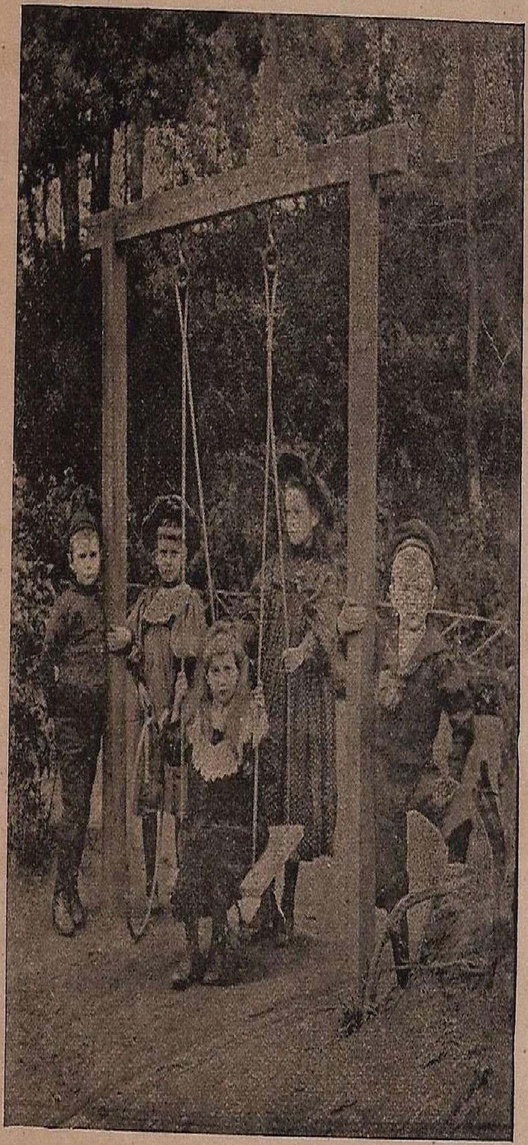

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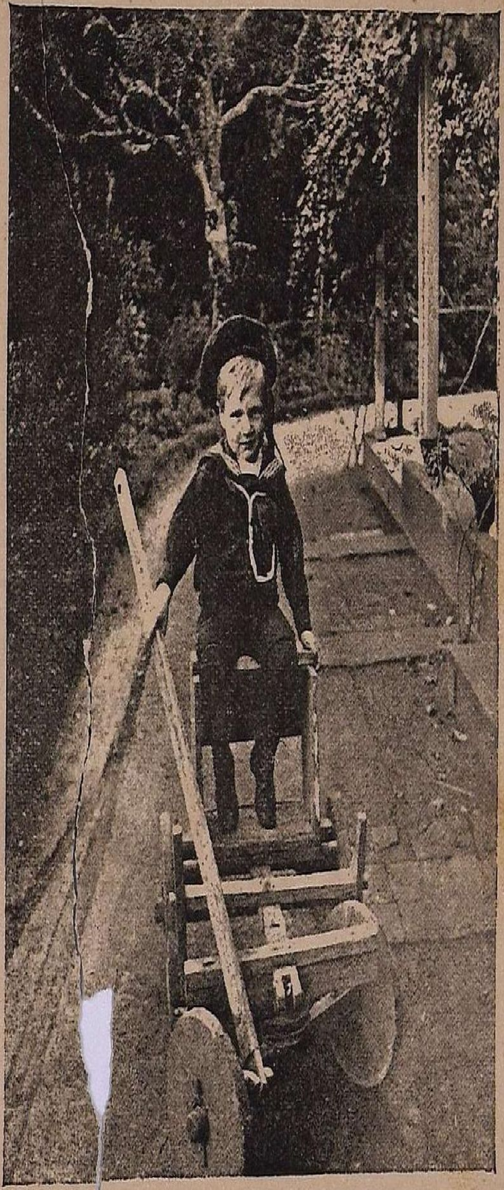

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"LIONEL"

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OUR HOME LETTER.

WE are sure that members will very gladly welcome back to this country our energetic and able member, Mr. Dunsterville, who for the past nine months has been keeping us in touch with matters Photographic "at Home" by sending us those interesting letters which have appeared regularly in our Journal under the above heading. Unfortunately, Mr. Dunsterville cannot be in two places at once, and as he is here he will doubtless be ready to take up the *aegis* that owing to ill health he was obliged to lay down when he left for England. We are glad to announce that Mr. Mathew Surface has very kindly promised to send us a monthly letter with the object of keeping us "up to date." In all matters relating to Photography, Mr. Surface's name will be very well known as the able Editor of the *Practical Photographer* and *Junior Photographer*; two papers devoted to the interests of amateurs, and affording help, *real* help, to beginners and others who have not the assurance and certainty of success which only long practice and experience can give. Mr. Surface's first letter appears in this issue of the Journal.

MODERN PRINTING PROCESS.

IT will doubtless be interesting to our readers to learn the present tendency of amateurs in the use of the various printing processes which compete for their favour. At the International Exposition of the Photographic Club 520 prints were exhibited by amateurs hailing from England, America, Germany, Italy, Russia and France. Of these no less than 169 were printed on Platinum paper; while of the remainder, 120 were on Gelatine Bromide paper, 81 on Carbon paper, 34 on Salted paper, 33 on Aristotype paper, 34 on Carbon Velvet paper, 26 on Bichromatised Gum paper, 9 on Albumenised paper, and the rest on various others.

The facility and the rapidity of development in the case of Platinum paper, its capacity (in capable hands) for giving the most beautiful prints from weak negatives, and its permanency, places it, *facile princeps,* at the head of the list in popular estimation.

We hope in the course of the next few months to be able to publish a paper (now in preparation) on Platinotype printing by Mr. Dunsterville.

OUR ILLUSTRATION.

THE best pictures that were exhibited by members at our August Meeting have been reproduced for us in half tone by the M. E. Press, and, we think, give a very good idea of the pictures themselves. The particulars given by Mr. P. N Rose are as follows:—"Taken with a $\frac{1}{2}$-plate Rectigraph Camera on a Wratten's Instantaneous Plate, Stop *f*/10, at 4 o'clock in the afternoon, with 1 second exposure, in a fairly bright light."

Advice on Photographing a Landscape.

MR. JOHN CLARKE, in the *American Amateur Photographer,* gives plenty of sound useful advice to amateurs on taking a landscape. He points out that the degree of success to which the artist attains is dependent on his observance of certain well-known laws in their relation to each other. His remarks are directed more particularly to what he calls "Locality," that is, the position in the plate of the five elements of an ordinary landscape, namely, foreground, middle distance, distance, sky, and principal object, any of which may contain the *motif* or dominating power, and to which the others are but accessories. On the relative positions that these occupy in a negative the success or failure of the picture largely depends.

The "distance," or rather its limit, the horizon, rarely gets the attention its importance warrants. The point at which, say, the sea and sky appear to meet is always on a level with the eye of the observer, whether he kneel on the shore, or look at it from the highest tower, and therefore the natural position of the horizon of a picture should be considerably below the middle of the plate, or about one-third from the bottom.

In cases where the foreground and middle distance are of such interest that they really make the picture, an exception to this law can be made, but, where an horizon higher than about one-third from the bottom is desirable, it should never be in or near the middle of the plate, but should rather be lifted up to one-third from the top. But this liberty must never be taken with seascapes, marine views, or where a river is represented as running to or from the distance.

Briefly stated, the law of the horizon is this: Always, when possible, place it about one-third from the bottom, and, where that may not be, then about one-third from the top; never, on any consideration, on or very near the middle, and in marine views never anywhere but about one-third from the bottom.

Concentration is another important feature in a picture. By concentration is meant that there shall be only one object or point of special interest, to which all the rest of the included matter shall be subservient, and up to which, as far as possible, the leading line shall lead the eye.

Of considerable importance, too, is the place on the plate occupied by this objective point. It will help the student to understand what is required if he will draw four pencil lines straight across the ground glass of his camera, each respectively one-third from the bottom, top, and each of the two sides. The ground glass will now be divided into nine squares of equal size, but very unequal value, as places on which to place objects of special interest. The centre is the weakest part of the picture, and nothing of particular interest should ever be placed in or on it, and weak also, although not so much so are those to the right and left of it.

The strongest points are the crosses formed by the intersection of the lower horizontal with the two vertical lines, and always, when practicable, the principal object of the picture should be on or near one or other of them; or, where that is impracticable, on one or other of the upper crosses.

It cannot be too strongly impressed on the mind of the beginner that no landscape is worth exposing a plate upon that does not include one principal object of attraction or point of interest, and quite as objectionable is one that includes more than one of such points or objects. Concentration is a powerful factor in the production of pictorial effect, and therefore, whatever else the picture contains should not only be in harmony with the principal object, but should also directly guide the eye to it, like a series of streets all leading to the principal square of a city.

Next in importance to the principal object of a picture is perhaps the foreground, and, curiously enough, next to the misplacing of the horizon line, there is nothing in which photographers more generally err by giving it too much space and too little attention.

While nothing is more inimical to good pictorial effect than a large stretch of bare or empty foreground, the value of one that is sufficient and suitable can hardly be over-estimated; as it may be made, not only the key to the composition, but to balance and harmonize lines otherwise objectionable, accentuate the distance, and lead the eye to the objective point.

A well deserved condemnation is given a class of picture that only too often appears in Magazines, and which amateurs take as really good examples of art in photography, and take the earliest opportunity of emulating whenever an opportunity occurs. Mr. Clarke says: "While speaking of foregrounds, I may take the opportunity of a few words in strong condemnation of a style of picture that is much too common, and which the editors of several of the photographic magazines have not unfrequently palmed off on their readers as good examples of art in photography. The photographer comes across a "beautiful bit." He is on one side of a small lake or pool without a ripple on its surface. On the opposite side are beautiful, and it may be beautifully arranged, groups of trees, with the light in such a position that every branch and leaf are reproduced by reflection on the surface of the water with a force and detail equal to the objects themselves. The camera is placed in position so that the junction between the real and the reflected objects shall be exactly in the middle of the plate, from, I suppose, some unthought out idea of fair play; the one being as good as the other, neither should have any advantage over the other.

This is how not to make a picture of such a subject; how to make a picture of it is as follows: The camera must be placed so that the junction between the real and the reflected objects is about one-third from the bottom of the plate, and, if possible, at such a distance as to include in the foreground some portion of the near bank. Where this is impossible, a boat should be got or a rough raft constructed; anything in fact that will float and break up the tame insipidity of a vacant piece of water. Then, just before removing the cap, a large stone should be thrown into the water, and the exposure made while the ripple is at the strongest, and the result will be a picture in the true sense of the word, only needing a suitable sky to make it perfect.

The Value and Use of Stops.

MR. RICHARD PENLAKE in a paper contributed to the *Junior Photographer*, remarks on the large number of queries that are addressed to the photographic press on the above subject, and opines that the cause is that most amateurs, and necessarily all beginners, have not devoted any time to the study of photographic optics. Yet the subject is an interesting one, and not difficult to grasp. He says:—

"There are strictly speaking three kinds of stops or diaphragms—(1) the iris, (2) Waterhouse, and (3) rotating; there are various forms of these which differ slightly in construction, but in which the principles are the same. The iris pattern is undoubtedly the handiest, and one which it is impossible to lay aside, as it is fixed permanently to the lens. It consists of a number of metal tongues which are attached to a ring in the lens tube, by the rotating of which the tongues contract or enlarge the opening. An arrow—or other mark—is engraved upon the moveable ring which, when revolved, points to one or other of the diaphragm (or stop) numbers engraved on the mount. This pattern is largely employed on rapid rectilinear and view lenses. There are of course exceptions to the rule, but I believe the day is not far distant, when all good lenses—no matter what pattern—will be fitted with the iris diaphragm.

Fig. 1.

The Waterhouse diaphragm is most commonly used on lenses having very large apertures. It consists of a number—usually six—of metal plates pierced

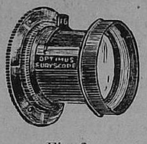

Fig. 2.

Fig. 3.

with openings of various sizes, one of which is inserted into the lens tube through a slit at the top of the mount.

The rotating, or wheel, pattern, as the name implies, consists of a circular metal disc pierced with a series of apertures, which rotates in the lens mount, and so brings the desired opening into the tube. This latter pattern is generally fitted to wide angle lenses on account of its convenience of being rotated when the component lenses are in close proximity to each other.

The iris diaphragm is always marked with the focal values of the stops upon the lens mount. The other patterns however, even with some of the best makes, are not marked in any way. Here then an apparent difficulty arises, "How must they be marked?"

There are many ways of ascertaining the focal value of a stop, but Mr. Penlake gives the simplest. Rig up the camera as usual, and focus sharply an object at least 300 yards away, or even the clouds. Firmly clamp the camera, and carefully measure the exact distance from the focussing screen to the back of a single lens, or, if the lens be a doublet, measure to the stop in the centre of the tube. The result will be the focal number.

Suppose the lens is 6in. focus and the stop $\frac{1}{2}$in. diameter, the number of the stop would be 12, because 6 divided by $\frac{1}{2}$ is 12 ($6 \div \frac{1}{2} = \frac{6}{1} \times \frac{2}{1} = 12$). A $\frac{1}{4}$in. stop with the same lens would be 24; $\frac{1}{8}$in.=48, etc. The following table may simplify matters:—

Dia. of stops. in.	Focus of lens. 4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$
$\frac{1}{8}$	32	36	40	44	48	52
$\frac{3}{16}$	$21\frac{1}{3}$	24	$26\frac{2}{3}$	29	32	$34\frac{2}{3}$
$\frac{1}{4}$	16	18	20	22	24	26
$\frac{3}{8}$	$10\frac{2}{3}$	12	$13\frac{1}{3}$	$14\frac{2}{3}$	16	$17\frac{1}{3}$
$\frac{1}{2}$	8	9	10	11	12	13
$\frac{5}{8}$	$6\frac{2}{5}$	$7\frac{1}{5}$	8	$8\frac{4}{5}$	$9\frac{3}{5}$	$10\frac{2}{5}$
$\frac{3}{4}$	$5\frac{1}{3}$	6	$6\frac{2}{3}$	$7\frac{1}{3}$	8	$8\frac{2}{3}$
$\frac{7}{8}$	$4\frac{4}{7}$	$5\frac{1}{7}$	$5\frac{5}{7}$	$6\frac{2}{7}$	$6\frac{6}{7}$	$6\frac{3}{7}$
1	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$

Example—Required to know the *f* value of a stop, $\frac{5}{8}$in. diameter, with a 5in. focus lens? Run the finger down the 5in. column until it reaches the $\frac{5}{8}$in. line where the figure 8 will be found, the number of the stop is therefore *f* 8. If, however, the lens be of 10in. focus, the stop will be double that of *f* 8, *i.e.*, *f* 16.

A more mechanical method, and one that requires practically no calculation, is to draw a line on a piece of paper as long as the focus of the lens. Take a pair of small compasses, and measure the diameter of the stop, then with the compasses measure how many times the diameter of the stop (represented by the open compass) will go into the drawn line. The result gives the *f* number.

On the relation of the aperture to the focal length depends absolutely the rapidity of a lens. A so-called "rapid" lens for instance, when stopped down to *f* 16, is no more rapid than any other lens at *f* 16, it matters not whether it be portrait, view, wide angle, etc.

Another puzzling question is "What is the relative value of stops?" Suppose we have been getting good negatives when using *f* 8, and want to stop down to *f* 16 in order to get definition—"What exposure must be given?" or in other words "How much longer does it take a given amount of light to pass through *f* 16 than it does through *f* 8?" This may be answered by squaring the stops; in this manner we can arrive at the relative exposure. If 8 be squared, we get 64 ($8 \times 8 = 64$) and with 16 we get 256 ($16 \times 16 = 256$); the exposures therefore are as 64 to 256 or 4 times as much; for another example take *f* 11 and *f* 64, the former squared will be 121 the latter 4096; the exposure required then is as 121 is to 4096—nearly 34 times that for *f* 11.

Some stops are marked by what is called the U.S. No. or "Uniform System." This method is adopted by the Photographic Society of Great Britain, and may be ascertained by squaring the *f* value and dividing by 16. Suppose we want to mark a stop with the U.S. number, the *f* value must be first obtained, *f* 8 for example, which when squared produces 64; this divided by 16 gives us 4 the U.S. No. The following glance table may prove useful for reference.

f value.	U.S. No.
8	4
11.3	8
16	16
22.62	32
32	64
45.25	128
64	256

One advantage of using this system is that each stop requires double the exposure of the preceding one.

The chief use of stops is to obtain the required definition. I cannot explain this better than by using the diagram fig. 4.

Let A be the view, B the lens, and C the plate. When the largest stop is used, the space between the figures three would be in focus, whilst the other part would be fuzzy. In using a smaller stop, say *f* 16, the space between the figures two would be in focus, and when the smallest stop is inserted the whole view should be sharp upon the screen.

Another use, is to get a flatter field, or to bring the various planes of the picture into focus. Suppose we have a view consisting of a gate as foreground, a church in middle distance, and some mountains a mile away, we cannot when focussing with a large stop get the whole lot into sharp focus; if the gate

be focussed the church will be fuzzy, and *vice versa*. To get over this difficulty we must use a smaller stop. When focussing such a view, get a main object as

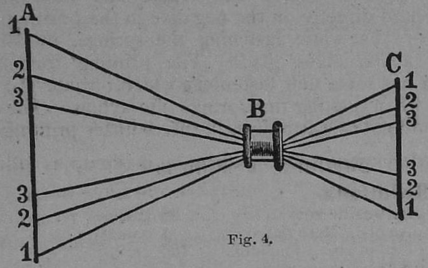

Fig. 4.

sharp as possible and while under the focussing cloth insert smaller stops until the required sharpness and definition are secured, remembering that the smaller the stop used, the longer must be the exposure.

When taking portraits it is often not desirable to get the surroundings microscopically sharp. It is advisable therefore to use as large a stop as possible, especially in the case of vignettes, when it is desirable to have the edges of the picture indistinct.

Stops are specially useful with a so-called "fixed focus" lens, because by their aid we may bring the fixed focus to a nearer point. This is paradoxical and needs explanation.

When using a fixed focus camera, we have in our mind a fixed focus point; we know very well that figures (say) 10 feet distant will not be in focus, while those beyond that distance will be. By the aid of stops then, we may bring the limited distance to 8 feet, and if required, much less. The following table gives approximately the point in yards beyond which all is in focus with a given lens and stop:—

Equivalent Focus of Lens.

Stop.	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6
f 8	$5\frac{1}{2}$	$6\frac{3}{4}$	$8\frac{1}{2}$	10.	12
f 11	4	$4\frac{3}{4}$	6	$7\frac{1}{2}$	9
f 16	$2\frac{3}{4}$	$3\frac{1}{4}$	$4\frac{1}{4}$	5	6

Take a fixed focus lens 6in. to be working at *f* 8, all beyond 36 ft. (12 yds.) would be in focus, but by inserting *f* 16 therein, the distance would be brought much closer—to 18 ft. (6 yds.) It must be borne in mind, however, that the exposure is increased by each smaller stop, the extent of which may be calculated by the method given above.

Collodio-Bromide for Transparencies.

[*A communication to the Amateur Photographic Society of Madras.*]

I have been induced to come forward on this occasion and show the process of making and using collodion emulsion, as it appears to me that the process has almost entirely escaped the notice of amateurs in this country; and as the process is one peculiarly adapted for use in hot climates, I trust that the short description I am about to give of it will induce some more competent members of our Society to take it up and show us what can be done with it.

The formula, on which the process as shown by me is based, was originally given to me by one of the leading amateurs in London, and the developing and other formulæ are the result of my enquiries and experiments. The plates made by this formula would be considered as very slow indeed by any one who only has experience of the modern rapid gelatine plate, but although they are so slow, the exposure for contact transparencies is only 2 to 5 seconds with a clean, bright negative and diffused daylight:—

Plain Collodion.

Alcohol, methylated	$4\frac{1}{2}$ drams.
Ether	$3\frac{1}{2}$,,
Gun-cotton—high temperature	12 grains.

Bromide Solution.

Alcohol, methylated	$1\frac{1}{2}$ dram.
Distilled water	20 minims.
Ammonium bromide	13 grains.

Silver Solution.

Distilled water	12 minims.
Silver nitrate	20 grains.

It is generally considered that the most important point in the whole process is to obtain a suitable quality of pyroxiline, and when this has been got, the rest is comparatively easy: it is advisable, on getting suitable pyroxiline, to make a stock of plain collodion and let it rest for some time, so that all insoluble particles and other impurities may sink to the bottom: tall, narrow bottles are best to store it in. The proportion for a stock may be:—Alcohol, 22oz.; ether, 18oz.; pyroxiline, 1 oz.

The bromide should be dissolved in the given quantity of water made almost boiling, and the alcohol should not be added until the solution has got quite cool again.

The silver may be readily dissolved if the water be warmed.

To make the emulsion, pour the 1 ounce plain collodion into a clean 4 ounce bottle with glass stopper, then add the bromide solution, shaking well for some minutes: the bottle containing the bromized collodion should then be taken into the dark-room and the silver solution added little by little, shaking well between each addition: it is well to rinse out both the bromide and silver bottles with a little of the collodion to ensure the whole of the salts being taken up.

The emulsion should then be kept in the dark for about 24 hours, shaking well at frequent intervals, and when ready for washing, it should be poured into a glass dish which should be large enough to contain the quantity of emulsion in a mass not thicker than $\frac{1}{8}$ inch: as the solvents evaporate, a skin forms on the surface which should be broken up occasionally with a silver spoon, or an ivory paper knife. When the solvents are completely evaporated, the pellicle should be washed in frequent changes of distilled water for half an hour or so until all the soluble salts have been removed. The pellicle should then be squeezed in pieces of clean calico until as much as possible of the water is removed, and it can then be dried by moderate heat over a water-bath. The whole of the washing process must be done in the dark-room or at night time by the light of a candle placed at some distance.

When quite dry the pellicle may be re-dissolved in $\frac{3}{4}$ ounce alcohol absolute, ·805, and $\frac{3}{4}$ ounce ether sulphuric pure, ·720 (pouring the ether on first); and when all the the pellicle is dissolved, the bottle (a 4-ounce one) should be well shaken up, and in about 20 minutes to half an hour the emulsion will be ready to coat plates with, after being carefully filtered.

The plates ($3\frac{1}{4}$ inches square for choice) should be very carefully cleaned in the following way:—First soak them in

dilute nitric acid (acid 1 part, water 10 parts), then rinse them in plenty of clean water, drying them with a clean cloth. They should then be polished on both sides with a cleaning solution (say Tripoli powder mixed with methylated spirit and a little ammonia), after which they may either be edged with India-rubber solution to the extent of $\frac{1}{8}$ inch all round, or they may be dipped in a hot solution of gelatine (20 grains to 20 ounces water) and dried with a clean cloth.

The filter for the emulsion may be merely a small funnel with a little tuft of cotton jammed in it, through which a little alcohol should first be run, or what is better, the first portion of emulsion running through may be returned to the filter.

Before coating a large number of plates, it is advisable to try whether the emulsion is in good working order and free from fog: to do this, coat a plate with the emulsion, and as soon as it is well set, wash it in clean water until all the alcohol and ether are washed out, then pour over it a little developer of full strength, and after letting it remain on the plate for a few minutes wash well and fix it: this of course should all be done in the dark room and the plate should fix out perfectly clear and free from fog or stains. If stains are present, the cause is generally dirty plates (that is, they are not chemically clean), but if fog is present, a drop or two of an alcoholic solution of iodine will effect a speedy cure. If the latter addition be necessary, the emulsion must be well shaken up again and allowed to rest for half an hour before re-filtering and coating plates.

To any one who has worked the wet process, it will be easy to coat plates with the emulsion, but as very many of those belonging to the Society are probably only acquainted with the modern gelatine plate, a short description may be useful.

After securely fixing a pneumatic holder to the back of the plate, dust the top surface with a flat camel-hair brush and pour on the centre of the plate a pool of emulsion that will cover about one-fourth of the whole area: let the emulsion run to the right-hand far corner, then to the left far corner, then to the left near corner, and finally pour off the surplus by the right near corner into the filter: the plate should then be raised to an almost vertical position and rocked vigorously to and fro to prevent markings: when the emulsion is apparently set and no more drops from the plate, it may be put into a grooved rack to dry spontaneously or laid upon a flat surface and dried by gentle heat, 150 °.

A few dozens of plates may be coated in a very short time, and they will keep very well for a considerable time.

Transparencies may now be made on these coated plates either by contact or in the camera: by contact, using a clean bright negative (like the one now shown) with diffused daylight, the exposure need only be from 1 to 4 seconds: in the camera the exposure of course depends upon the amount of reduction and the stop used in the lens, so that it is almost impossible to give any safe guide, but I may say that using a Ross' Rapid Symmetrical Lens, full aperture, a clean bright negative $6\frac{1}{2}'' \times 4\frac{3}{4}''$ to be reduced to $3\frac{1}{4}$ inches square, and using the clear sky as a background, the exposure may be anything from 2 to 6 minutes. When making slides by reduction in the camera, the plates may be exposed as soon as coated and the emulsion set: there is no need to wait until they become dry, as they are put in a dark slide, and the surface therefore does not get injured in any way.

The longer the exposure, the warmer in color will be the resulting picture. Short exposures and full strength developer give black cold tones, but full exposures with diluted or restrained developer give almost any color from brown to ruby, and these warm colors can be subsequently modified to any extent in toning.

Too much care cannot be exercised in handling these plates, the surface being very much more delicate than that of the ordinary gelatine plate. The negative must be very carefully dusted with a flat brush, and then the plate must be laid directly on the negative in the printing frame, taking care that while fastening the springs, no sliding or rubbing action takes place. The printing frame shown herewith has some new fastenings which obviate the risk of rubbing when putting the springs into action. The springs also should not be so strong as in the ordinary printing frame.

The developing solutions may be made up as follows:—

Stock Solutions.

1.	Pyrogallic acid ...	96 grains.	
	Alcohol, Methylated ...	1 ounce.	
2.	Carbonate of ammonia ...	160 grains.	
	Potassium bromide ...	5 „	
	Acetate of soda	10 „	
	Distilled water	3 ounces.	
	or		
1a.	Pyrogallic acid	1 ounce.	Faintly acid with citric acid.
	Sulphite of soda	4 ounces.	
	Distilled water	9 „	
2a.	Liquor ammonia ...	1 ounce.	
	Bromide potassium ...	2 ounces.	
	Water, distilled ...	9 „	

To develope, first soak the exposed plate in dilute methylated alcohol (2 spirit to 1 water), and then wash off the spirit with plenty of clean water: the working developer may be made up thus, either—

1.	15 minims	or ...	1a.	40 minims.
2.	2 drams	„ ...	2a.	10 „
Water,	2 „	„ ...	Water,	3 drams.

A very little developer is sufficient if the plate be held in the hand, one dram easily developing a plate $3\frac{1}{4}$ inches square: if fully exposed, the developer may be diluted with another dram or two of water; the image soon makes its appearance and rapidly developes up to full density. When there is any sign of veil coming over the high lights, wash off the developer and fix in potassium cyanide, 15 grains to the ounce of water, and well wash for half an hour.

It may be as well to mention that potassium cyanide is a most deadly poison (3 grains being a fatal dose), and that it is not necessary to keep the dish with this solution in the dark room: if the plate be well washed after developing, it may safely be taken outside the dark room and dropped into the fixing solution, which may be on a table out in the open air: bad headaches will thereby be avoided.

After fixing and well washing the plate may be examined, and should any veil appear on the high lights, clear it off by soaking the plate for 3 or 4 seconds in a solution made by taking a few drops of an alcoholic tincture of iodine and adding to them distilled water till the solution is the color of pale sherry: again wash and return to the fixing dish. If still not quite clear, do it again, and again if necessary—then wash well.

To tone the transparency, take

Platinum tetra-chloride	1 grain.
Nitric acid	1 minim.
Water	4 ounces,

and immerse the plate, watch carefully, as the toning proceeds very rapidly: as soon as the wished for color is produced, take the plate out at once and wash well and quickly.

Should the toning have gone too far, the warm color may be restored by flowing again over the plate the alkaline developing solution and the toning done over again more carefully.

Should the picture appear too thin after toning, it may easiiy be intensified to any degree by the following solution:—

Pyrogallic acid	... 30 grains.	To each dram of this add 2 or 3 drops of a 20-grain solution of silver nitrate.
Citric acid ...	... 30 "	
Alum	... 30 "	
Distilled water	... 15 ounces.	

Should the picture appear too dense after toning, it may be reduced by flowing again over it the fixing solution.

After any of these operations the plate should be well washed, and when quite finished and dried in a place free from dust, it should be varnished with a clear pale varnish which should be carefully filtered through tissue paper or cotton wool.

The final operation for a lantern slide is mounting it in contact with another clean glass of the same size, putting a suitable mask between them and binding the edges with strips of black paper.

Mounting a lantern slide requires some consideration, and each slide should be mounted in a mask that is specially suited to show off the artistic beauties of the picture: it used to be the custom to mount all lantern slides with a circular or cushion-shaped opening, but this was only done on account of the practice of using two lanterns for dissolving, so that it was then necessary to have all the pictures with openings of the same shape and size in order to get the views to register correctly on the screen.

Now, however, that single lanterns with slide-holders capable of very rapid changes are more in vogue, there is no need for such conservatism, and I would advise every one to make and mount his slides with masks of the size and shape best adapted to each particular view.

It is also usual to put on the front of the slide one or two white spots of paper at the top, and then on putting the slides into the holder of the lantern these white spots will be at the bottom next to the condenser.

The name of the picture may be written on the mask (before mounting) in Chinese white, or a slip of white paper may be gummed on the front outside and the name written in black ink.

Whatever plan any one may adopt for marking his slides, it is advisable for each to stick to one and the same plan for all of his own slides, and then less trouble is likely to occur if a stranger is showing them in the lantern.

FRED. DUNSTERVILLE.

OUR HOME LETTER.

In England here we are just recovering from the effects of a week's holiday at the Shrewsbury Convention, or, in other words, we are feeling brighter and brisker as the result of several days spent mostly in the open air.

The Photographic Convention of the United Kingdom has developed into quite an important gathering, and photographers from all parts of Great Britain assemble together at some centre previously arranged for every year. Shrewsbury proved a capital meeting place, and the Shrewsbury Committee discharged their duties admirably. There were excursions every day to picturesque spots in the district, and it was rather a novel sight to see as many as one hundred and fifty photographers, two-thirds of whom were armed with cameras, slashing away at castles, abbeys, and various natural beauties on all sides. Perhaps the pick of the excursions was one to the old town of Ludlow rendered prominent in the mind of the photographer by the fact that the great leader, H. P. Robinson, was born there. The charm of the day was added to in no small degree by the presence of Mr. Robinson, who conducted one of the parties along the banks of the river Teme in and about many pretty little places. The veteran photographer was frequently congratulated on his choice of a birthplace.

We are looking forward to the two principal exhibitions which open in about a month's time. I allude to the exhibition of the Royal Photographic Society, and the Salon. The latter exhibition is got up by a number of men who seceded some time ago from the Royal Photographic Society on the ground that, at that exhibition, the judges dwelt too seriously on technical execution, and did not allow sufficient credit to artistic merit. Both exhibitions are excellent in their way, and all who can, go up to London to see them.

In England we seem to have reached a high standard in regard to *execution*, but just as in the Royal Academy one notices a lack of originality in *conception*, so among photographers fewer pains are devoted to the choice of a subject than to the detail and execution, and in this respect only does one find better work on the continent of Europe.

The recent improvements in lenses have done much to further the advances of photography. The "Zeiss" and "Goertz" makes have been followed by one on the same lines invented by H. D. Taylor, and called the "Cook lens." It has just been put on the market by Messrs. Taylor, Taylor, and Hobson, the well known lens manufacturers of Leicester. It has the advantage of being cheaper than the above named lenses, while results with it are equally satisfactory.

Discussions are rife at present on the subject of illustration. Some magazines there are which discard photography and stick to the old wood engravings, others are greatly enamoured of the half-tone process, and have discarded wood engraving altogether. The real truth of the matter is that, if one can get a very good photograph and have it engraved in half-tone, it is better than a wood engraving, with the exception perhaps of one produced by a master of the art, and masters are rare; but on the other hand a photograph taken carelessly, under-exposed and forced in development, or over-exposed and consequently fogged, will *not* yield a good half-tone block, however careful and clever the engraver may be. Some of our English magazines and weeklies seem to think that any miserable production may be forced on the British public so long as it is produced by some photographic process. Put a man in as editor of your magazine who has no knowledge of photography, and but faint notions of art, and he will find a place for all sorts of miserable claptrap, revolting to a man with artistic feelings, and offensive even to one with any grasp of technical ability. So at present we are deluged with third-rate publications, reproduced in a third-rate manner. Time only will improve matters. There is no doubt the general public is becoming more educated in art judgment, and they will ultimately select the best. Then, and not till then, will some of these miserable productions go to the wall.

Aluminium is coming more and more into general use in apparatus. One sees lenses made of it regularly, and the latest departures in this line are cameras almost entirely made of this metal. These should adapt themselves well for the Indian market, where variations in climate are so prejudicial to the lasting qualities of wood work. As yet, however, Aluminium is somewhat expensive.

MATTHEW SURFACE.

PROCEEDINGS OF THE SOCIETY.

:o:

Monthly Meeting, held at the Masonic Hall, Mount Road, Friday, 4th October, 1895.

Mr. E. W. Stoney, *in the chair*.

The minutes of the last monthly meeting, having been circulated to members were taken as read and confirmed.

Read Letters from the First Prince of Travancore, replying to Mr. Mark Clementson's enquiry about an Enlarging Camera, and on the frilling of P. O. Papers. The former has already been forwarded to Mr. Clementson, and the latter will be found in the correspondence column of this issue of the Journal.

Read Letter from Rev. Maennig, giving his experience of Rodinal as a developer for Bromide Plates. This letter will also be found in the correspondence column of this issue of the Journal.

Read Notice of the Eighth Annual International Exhibition of Photographs, to be held in Calcutta during February 1896, under the auspices of the Photographic Society of India. The Exhibition is open to the World, and the following Medals will be awarded :—4 Gold Medals, 12 Silver Medals, and 15 Bronze Medals. One Gold and one Silver Medal will be reserved for the best Picture and for the best Bromide Enlargement by a Native Amateur. One Gold, 4 Silver, and 5 Bronze Medals will be reserved for Amateurs of the Society, *i.e.*, the Photographic Society of India ; the remainder are open to all exhibitors—Amateurs and Professionals. Copies of the Rules and Regulations can be obtained from the Honorary Secretary, Calcutta.

Read Letter from the Editors of *The Photogram*, announcing a Prize Competition for a variety of prizes. It was observed that only one of the subjects was open to amateurs abroad, viz.—Class No. 4, a prize of £5-5 for the "Best Practical Article on a Photographic Subject," to consist of not less than 1000 and not more than 5000 words ; may be illustrated or not. The competition closes February 29th, 1896.

New Members.

The Honorary Secretary proposed Mrs. Shaw, Madras ; Mr. Chas. H. Payne, Palghaut ; Mr. Hugh M. Leslie, Oorgaum ; and Mr. T. N. Varty, Lingsagur, as new members of the Society. They were seconded by Mr. Ellison, Mr. E. W. Stoney, Mr. V. C. Lynn, and Mr. F. H. D. Pinsent respectively, and duly elected.

The Question Box.

Q.—I send you two negatives for the opinion of Members. It will be seen that both negatives have a distinct line dividing the left hand side of the plate, this portion of the negative in development comes up long before the remainder of the plate shows any action of the developer ; it is not in any way fogged, but on the contrary the film seems to be more sensitive and every detail comes up clear and sharp. But before the remainder of the plate is developed to printing density, one of two things happens, either that part of the plate is over and hopelessly over-developed or the rest of the plate is under developed. The plates are Wratten's ordinary, and they have been in the slides for a month, but I may remark that I observe the same results, but to lesser extent, if the plate has only been in the slide a few days ?

A.—The excessive sensitiveness is due to some chemical used in pasting or blacking the linen over the flexible portion of the dark slide shutter. It is of frequent occurrence, and may be remedied by varnishing the inside of the shutter with a preparation of Lamp-black, Gold Size, and Turpentine. Mix a quantity of Lamp-black (about enough to cover a sixpence) with sufficient Gold Size to make a thin paste, and then thin again with Turpentine. This will give a dead matt black surface and you will have no more trouble.

(1) *Q.*—In mixing up some Amidol developer, the Amidol powder was added to a saturated solution of Sulphite of Soda before adding any Bromide. Result—First a light grey, flakey precipitate formed, and then a fine grey precipitate. On filtering off the precipitate and adding the usual amount of Bromide, the solution developed a plate and gave a good clear negative. Can any one explain the cause of the precipitate and why the action of the developer was not altered. The Amidol was freshly opened and in appearance was like very fine iron filings. The Sulphite of Soda was not quite fresh though only crystals were used.

A.—It is probable that the water used in making the developer was not quite pure. If you used distilled or filtered rain water you will have no difficulty. We might mention that a made-up Amidol developer does not keep well, we would advise you to make your stock solution and add the desired quantity of dry Amidol just before use.

(2) *Q.*—Why, when a photograph of a landscape or other subject with sky in it is taken between 5 and 6 o'clock in the evening in sunshine, do clouds come out with printing density in the negative Ordinary plates were used, and no Isochromatic screen, and the proper exposure was given for the foreground.

A.—Probably, from the yellowness of the evening light reducing the contrasts between high lights and shadows ; but, really, now-a-days, there is very little difficulty in securing clouds with landscapes at any time of the day.

(3) *Q.*—I send you a print which, when I put it in the toning bath (a used one), turned quite an orange colour. As it did not show any signs of toning, I put it into the Hypo bath, and left it in for about 12 hours, when it turned the present colour (a pale yellow). Is it a fluke, or has the length of time in the Hypo to do with the change of colour ?

A.—The Bath used had evidently no Gold in it, the tone is the usual one produced by Sulphur toning.

Monthly Competition.

Vety.-Major Adams.—(1). "English Church, Kasauli." Half-plate negative, but weakly printed, would stand more exposure. The building appears leaning towards the left instead of upright, this could be remedied by careful trimming of the print.

Rev. E. Maennig.—(1). "The Lutheran Mission House at Coimbatore." (2). "Banyan Road, Coimbatore." A most difficult picture to takes owing to the dense shadows, would be much improved by lighter printing of the dark shadows of trees. (3). "View in Calicut." Owing to its being taken during cloudy and rainy weather, is wanting in brilliancy, the arrangement of the picture is however very good. (4). "The Lutheran Church in Madura" (a first attempt in bromide). Very good indeed, but over-printed, consequently all high lights lost ; 35 seconds would have been a better exposure, and a few drops of Bromide added to developer to prevent fog. All the above are good pictures in other respects.

F. Pinsent.—"A Study," and "The Yacht 'Dorothy.'" Good pictures. This is the first attempt at a "Study" that we have seen in the last three months, the posing is good and the idea well expressed. We should like to see more of this class of pictures from members. The lake negative requires dodging in printing, the sail printed out more, and sky vignetted at left-hand top corner.

First Prince of Travancore.—(1). "Unloading Straw." A full plate Bromide print, lacks brilliancy owing to slight over-exposure or the paper not being fresh. (2). Quarter plate print on P. O. paper, is very good in every way, it is full of life, yet there is none of the usual objectionable staring at the camera.

Miss Speechly.—(Nos. 1, 2 & 3). Half-plate P. O. P. "Views of a River." No. 1 & 2 are not at all badly chosen subjects. No. 1 would have been better for a little life in the water, there is rather too much blank space. No. 2 is very good. Both, we think, would have been better for a little shorter exposure. The prints require deeper printing. No. 3, another view of the same river. The exposure is correct, but otherwise it is full of faults. It represents a placid and rippleless stream flowing between two wooded shores, no object of interest except the shadows of the trees in the water and picture divided in halves. We should like to see another view of this river scene after you have read the article by Mr. Cyril Burdett (page 116 of last month's journal) and "Advice on Photographing a Landscape" in this month's issue. (4). "An Interior" (A Quiet Corner.)—This is very good indeed, but the print is insufficiently toned. Should be printed deeper, especially at top, and toned more. We may add that we do not think the paper you are using is good, it must have got a little damp.

Mrs. Upcott.—Half-plate Bromide. The vignetting has been too close to profile, should be lower down and more to left of picture; also cut wrong, there should always be more space on the side towards which the subject is looking.

Mr. Ellison.—(Nos. 1 & 2) Full-plate Bromides. "A Group of Cattle." As this picture is not intended for the Annual Competition, we may say that the cattle are so mixed with the landscape that the object of interest is lost sight of, the printing of both is good. No. 3. "An Interior." Full-plate Silver Print. This is a very good picture, full of detail. It would be improved by more careful printing and toning, as it appears to us to be too darkly printed and slightly over-toned. Nos. 4 & 5. Full-plate Bromides of a "Lady on Pony." No. 5 is too dark, both would look much better vignetted and faces printed lighter. The easiest way of doing this is to paint a little pale yellow colour over the face on the back of the negative. Nos. 6 & 7. Half-plate views of the "Avern Ghaut" and "Ooty Lake on a Regatta Day." Both very good, and must have been taken on a remarkably clear day. No. 7 wants life on the water.

Mr. W. H. Oakes.—"Views on a Coffee Estate," taken with a Ross' Hand Camera 5 x 4. These all shewed a want of sharpness that will doubtless be overcome by more practice.

The Rev. E. Maennig's and Mr. Ellison's Pictures were considered the best exhibited.

Picture Subject for the Next Meeting.

In response to the Honorary Secretary's Post Cards, various proposals were made by members. "A Park Scene," A Little Girl from School, "A Village Street," "Cloud Effects," "Any Subject," A "Group of Natives, Horses, or Animals." It was decided to give *place aux dames*, and as "Cloud Effects" was the suggestion of one of our lady members, and suited in every way to the time of year, it was unanimously accepted. In taking this picture, our younger members should read the articles on page 116 and page 126 of the Journal, in which will be found many valuable hints.

The next meeting will take place on the 1st of November. Pictures intended for competition should be sent away about the 28th of this month.

The Hon. Secretary will be glad to receive suggestions from members for the Picture Subject for the November meeting.

Miscellaneous Exhibits.

A member offered to give, as a special prize, a copy of "Ewing's Hand-book of Photography" for the best specimen of Photography by ordinary Lamp-light, see article on page 124 of the Journal. The pictures to be shown at the Meeting in December, the Honorary Secretary and two Members of the Committee being the Judges.

Mr. Dunsterville kindly offered to show at the next meeting an Album of the Pictures he had taken during his stay at Home.

Mr. E. W. Stoney said that, as the Society's Lantern would be available, he would be glad to give the Exhibition of Lantern Slides which he was unable to do on a former occasion.

The President, in adjourning the meeting, said he was glad to see so many members present. He hoped this presaged a return of energy on the part of those members who were able to attend the meetings. He was also glad to remark favourably on the quality and number of the pictures shown, and he trusted that this improvement would continue. He was glad to see so many pictures sent in by the younger members of the Society. No beginner should be deterred from sending in specimens of his work from any feeling that they are not good enough; it should be remembered that we are all amateurs, and it is extremely likely that some of the more experienced older members would be able to offer some hint or advice which would prove valuable.

CORRESPONDENCE.

Note.—*Members are invited to contribute to this column the result of their experiences, the formulæ and method of working they like best, and the shifts and devices they are put to when overcoming any difficulty; also any enquiries they may wish to make.*

Also, under this heading, the Committee will publish their criticisms on pictures sent to them during the month. Many photographs are good in many ways, but as it will be of much more value to point out their weakness than to extol their virtues, the bad points only will be mentioned. Prints should be sent flat, with name and address of sender, together with particulars of exposure given and plate and lens used.

The Kallitype Process.

To the Editors of the "Journal."

Sirs,—I notice, in the *Junior Photographer*, Mr. Richard Penlake advises his readers to take up the "Kallitype" as it is a charming process, gives results like platinotype, the materials are cheaper, and the only method that will give an engraving black from a thin negative. The March number of the Journal gives a full account of it, to which nothing new is added except a developer for engraving black, *viz.*, a 10 per cent. solution of Sodium Acetate. I shall be glad to know whether any one in India has succeeded in working the process, and whether the Sodium Acetate should take the place of the Saturated Solution of Borax (the developer recommended by Mr. W. K. Burton for a Warm Black) and be added to the Rochelle Salt.

I take this opportunity of saying that I find the Journal most interesting and useful, and I should be sorry to be without it.

Yours, faithfully,

Bombay. PUZZLED.

"Frilling of P. O. P."

To the Editors of the "Journal."

Gentlemen,—I have been for the past one year working the Ilford Printing-out Paper, glazed surface. I expose the prints in the sun, wash them four or five times till all the free chloride of silver is completely washed off, *i. e.*, till there is no more milkiness in the washing water, and allow them to remain about two minutes in alum (2oz. to 10 oz. of water). They are then toned in the bath

Bi-carbonate of soda	30 grains.
Water	4 ounces.

and a few drops of a 15 grs. to 5 drachms of water" solution of chloride of Gold. The toning is stopped when the prints show no red colour when looked through. The fixing solution is a weak Hypo, much below the Ilford formula. I have had no cause to grumble about the result till a fortnight ago when I got a fresh supply of printing-out paper (Ilford) from Bombay. I invariably found that, with this supply, frilling began in the second change of water, and by the time they were ready for toning, the film almost left the support. Even the alum bath did it no good. If, by way of exception, a single print stood the preliminary operations the moment the toning solution touched it, lo! *jaldi!* the whole print got covered with innumerable minute air-bubbles, presenting the appearance of a person just recovered from a terrible attack of small-pox. I send what is left of the supply for you to try, and shall feel much obliged by your kindly letting me know the result. The thermometer reading at noon, that is the time of manipulation, has been 87° in the shade for the past few days.

Believe me,

Yours truly,

Trevandrum, 21st Sept., 1895. RAMA VURMAH.

N. B.—A slight mistake, for which I know the poor devil, the printer, alone is responsible, has crept into my communication on the subject of "A Back-ground for Amateurs". The word is "Sapan" *not* "Japan".

ANSWERS TO CORRESPONDENCE.

Special Notice—*Letters requiring an answer in this column must be received not later than the 5th of each month.*

All queries should be written on one side of the paper only, and be signed with the name and address of sender.

Best Developer for a Beginner.

TO THE EDITORS OF THE "JOURNAL."

With reference to the best developer for a beginner, mentioned in the September number of our Journal, I should strongly recommend Rodinal as the cleanest, easiest, and one that saves most time, inamuch as one drachm of Rodinal mixed with two ounces of water serves for four plates. For plates of which I am uncertain that they have been properly exposed, I used, at first, less Rodinal, which I add drop by drop afterwards till a good negative is obtained.

I am, Dear Sir,
Yours truly,
E. MAENNIG.

ABSTRACTS.

Guide Marks on the Ground Glass.—When you have occasion to make guide marks on your ground glass, do it with *slate pencil.* Then you can see the mark from the outside.—*The Photographic Times.*

A Fixing Bath.—The following is given in Messrs. George Mason & Co.'s publication, *The Photographer* :

Water	22 ounces
Bisulphite of soda	5 drachms
Hypo	2½ ounces
Chrome alum	1 drachm
Citric acid	7 drachms

It is said to yield negatives that are very pure and brilliant, and to keep exceedingly well.

A Continuous Toning Bath for Gelatine Prints.—A correspondent in the *British Journal* gives the following formula for a successful toning bath for gelatine prints which may be used for months day by day, giving a fine purplish-black tone :

Tungstate of soda	1 drachm.
Chloride of gold	2 grains.
Distilled water	10 ounces.

Mix and allow to stand for about a week before using.

The Toning Bath.—From *Photographic Scraps* we cull the following note : "We have recently seen it stated that the sulphocyanide bath should be carefully neutralized with chalk, etc., but, as this is contrary to our own views, we advise that any one who meets with the above recommendation should most carefully ignore it. As we have several times stated, most explicitly, it is quite unnecessary, and *indeed very unwise* to add anything to the bath. Such additions will inevitably tend to throw down the gold in the bath, and render its toning power absolutely *nil.* The same authority also suggests that stock-toning solutions should be made by adding chalk to the gold and sulphocyanide solution so as to give a heavy precipitate. Our earnest advice is *'dont.'* The only practical way of making up the toning bath is to dissolve the sulphocyanide into a stock solution, 300 grains of the sulphocyanide to 10 ounces of water. To prepare the bath, take 1 ounce of this solution to 15 ounces of water, and 2 drachms of the stock gold solution."

Bubbles in Lenses.—Sometime ago one of our members complained of, and objected to, the small air bubbles contained in an expensive "Göerz" lens he had just purchased. It appears, from a circular issued by Mr. C. P. Göerz, that the special Jena glass which is used for the best lenses cannot be produced without air bubbles, and that they are entirely without influence on the optical result of a lens.

Mountants and Mounting Brushes.—In an article contributed to the *Junior Photographer,* the writer referred to a complaint that has been made that prints mounted with starch paste had been known to fade, when unmounted prints made at the same time had remained bright and good. The cause of the fading was probably due to some chemical decomposition of the starch, but as no particulars were given as to whether a preservative had been used, the question is one which certainly needs a definitive settlement, because if the charge is maintained, gum, arrowroot, dextrine, and all that class of mountants will incur the same condemnation.

Dextrine alone, or in combination with gum arabic, is a favourite with many, but it should not be kept too long after being made up. India-rubber is an efficient but unpleasant medium, and the smell of the solvent employed is enough, or too much for most people.

One of the most convenient mountants is the one here given. It is a grand mountant from the adhesive point of view, and when too thick for photographic use is generally useful for domestic purposes, as being more convenient than ordinary flour paste :—

Gelatine (Nelson's No. 1 or Clear French)	2 oz.
Glycerine	½ oz.
Alcohol	2 oz.
Water	8 oz.

This is prepared by soaking the gelatine in water till quite soft and then melting by the aid of gentle heat ; then add the glycerine, and finally add the spirit, stirring carefully all the while. There is no need to add any preservative if the bottle be kept securely closed, but it is optional to add a drop or two of oil of cloves or of carbolic acid, or a piece of camphor may be previously dissolved in some of the spirit.

Another excellent mountant is one recommended in "Scraps," for use with P. O. P. The formula is as follows :—

Glue	3 oz.
Golden syrup	¾ oz.
Methylated spirit	3 oz.
Water	3 oz.

The glue, which must be the very best and whitest procurable, is soaked in a small jar overnight in two ounces of the water, and is dissolved by warming gently in a saucepan When it is quite liquid add the syrup. Next add the other ounce of water to the spirit and pour it slowly into the jar, stirring the mixture all the time to prevent precipitation. This mountant must be kept in a bottle with a tightly-closing bung or other top, and will then keep indefinitely.

It is better when using a gelatinous mountant to mount the prints dry, as the mountant becomes somewhat congealed when applied to a wet print. In selecting a brush for mounting purposes it is well to choose a good one. A brush with badly-fixed bristles or hairs is an intolerable nuisance. One of the best brushes to use is a small shaving brush with rather long stiff hairs.

NEW APPARATUS.

The New Cooke Lenses.

Our London Correspondent comments favourably on the introduction of these lenses it may therefore be of interest to our readers to give the makers description of them. Many new lenses have from time to time been introduced, chiefly by German manufacturers, with the result that improvements have been obtained by adding very much to their complexity, we are therefore glad to be able to note that the problem of obtaining an improved lens by simplifying it has been solved by an Englishman.

The Cooke Lenses are distinguished by their simplicity. Thus, unlike other Anastigmats, they are easy of accurate construction and especially of *perfect centering*, and certain residual errors which in the complicated cemented systems can only be removed after completion by reworking or replacing some of the glasses, and which for reasons of economy are usually but imperfectly remedied, are finally eliminated from the Cooke Lenses by *simple screw adjustments.*

Thus the Cooke Lenses are Uniformly Excellent.

The new principle involved in their construction is applicable to photographic lenses for all purposes, and to lantern objectives.

Lenses of Series III are of moderate angle, (one of 5 inches focus covering a quarter-plate, and other sizes in proportion). With their full aperture f/6.5, they are specially suited for all *rapid and accurate work requiring everywhere uniformly fine definition.* The smaller lenses of this series are doubtless the best Hand Camera Lenses on the market, and all are truly rectilinear and free from spherical error and from chromatic aberration both of axial and oblique pencils. They are constructed of particularly pure, transparent and durable glasses, and *their images are remarkably free from all traces of flare or ghost or other result of surface reflections..*

The Cooke Lenses are a distinct advance on everything preceding them.

EXTRACTS.

The Treatment of Gelatino-Chloride Paper.

British Journal of Photography.

Last month we commented on the " Washing of Gelatine Films in hot weather". Since then a writer in the *British Journal of Photography* has returned to the subject in relation to its special bearing upon gelatino-chloride papers. These papers have not, as far as our experience goes, proved a success in India, and the reason for this may very probably be due to a want of cure, or to a want of knowledge in its manipulation. Many authorities testify to the fact that equally good tones and whites are obtainable with gelatino-chloride paper as with the best albumen, and one of the chief advantages of the paper is that it will give brilliant prints from negatives too thin and delicate, or really too poor to give satisfactory results with albumenised paper. The main point to guard against is *too prolonged soaking of the paper before toning.* This not only does not free the paper from soluble matter, but is positively injurious, as all hope of brilliancy of tone is lost. The writer then goes on to say what is the proper treatment to pursue, and here we cannot do better than quote his own words.—

"The proper treatment for gelatine prints, previous to toning, consists of thorough and rapid washing, instead of prolonged soaking, no matter how many or how few pictures are under treatment. If a single print be left to soak for an hour in a moderately large volume of water, it will not be as completely deprived of its soluble matter as if allowed to remain for one minute each in five or six changes of far smaller bulk. If no satisfactory method be available of automatically keeping the prints in motion, no better plan can be adopted than that of passing them rapidly, one at a time, from one dish of water to another. The first two or three changes should be made as rapidly as possible, in order to get rid of the bulk of the soluble salts; after that it is of less importance, and they may be allowed to soak for two or three minutes; but in no case is it desirable to protract the washing beyond ten minutes or a quarter of an hour. The practice of using a bath of salt, in order to convert any traces of free silver, scarcely presents any advantage over plain washing, since, unless the salt itself be thoroughly removed, its action in slowing the toning is rather injurious than otherwise. For the same reason as we mentioned in our previous article, it is inadvisable to employ the preliminary alum bath, and if in very hot weather it be absolutely necessary to employ any substitute, such as Glauber's salt, it must be thoroughly washed out before toning.

Regularity and quality of tone are promoted by the use of a bath that would have been considered weak or slow in the days of albumen; a strength of one grain of gold in ten ounces of water will, in fact, be found to work quite quickly enough to be conveniently manageable, and to give better and more even tones than one of greater strength.

A bath may be employed almost immediately after mixing, and will then act not only with greater rapidity, but if anything give brighter tones. The acetate bath differs a little in this respect, but even that may be used within a quarter of an hour of mixing, and is then quicker than if kept some hours.

After toning the only care requisite is to wash perfectly, in order to prevent the action proceeding further than is required. Here the salt bath becomes useful in at once arresting all further action. The prints may remain in this until ready for fixing, but should be rinsed in one change of water, in order to avoid introducing any trace of gold into the hypo bath.

If the ordinary directions with regard to the fixing bath be observed, there is a little danger of anything going wrong at this stage. The chief points to be observed are that it should not be too strong—three ounces of hypo to the pint of water, as usually recommended, is quite strong enough—and it should not be allowed to act too long. If the prints are turned over singly two or three times during the operation, ten minutes will be quite sufficient, for here, as in the washing before toning, rapidity combined with thoroughness should be the principle. If left to soak in a mass, the operation of fixing is not thoroughly performed unless the process is much prolonged, and the longer the hypo is allowed to act the more will the tones of the prints be likely to suffer.

The washing after fixing, or the method of it, is another matter of importance, and here, again, the importance of *quickly* getting rid of the bulk of the hypo should be thoroughly recognised. One change of water in the early stage is worth two or three later on, and it more than repays the trouble, therefore, to give a little more than the ordinary care at the commencement. A very good plan we have seen used, and have adopted ourselves, is to have a basin of water next the fixing bath, and, on removing the prints from the latter, to rinse them simply in the basin and pass them on at once to a dish of clean water. In this manner the great bulk of the clinging hypo solution is removed before the prints are placed to soak, and if the first washing water be changed, or the prints themselves changed singly to a second dish as soon as the whole of them are out of the fixing bath, there will be but a very minute quantity of hypo left to remove, and after this they may be allowed to soak for five minutes between changes for an hour or so.

Coming to the question of the final alum bath, we have little hesitation in saying that this is the cause of more unstable prints than anything else.

If alum is used, then another thorough washing should follow it, but this need not be so protracted as the previous one. Half a dozen changes of the prints, singly from dish to dish, will suffice, but nothing less. As the function of the alum is merely to harden the surface of the print sufficiently to remove its unpleasant stickiness when mounting, a very superficial application will suffice; in fact, if the prints are immersed one by one in the alum solution, and at once transferred to a dish of clean water, the necessary duty will be performed and the need for a very prolonged washing considerably decreased.

Suggestions for Improvement of Defective Negatives.

(American Journal of Photography).

Of all the photographic manipulations, the most important one is to obtain a satisfactory or perfect negative, consequently it becomes a matter of more or less difficulty.

It is therefore not to be wondered at that almost all photographers are more or less concerned in everything that tends to improve or simplify this important process. How this matter is appreciated by the scientist and manufacturer may be judged from the continual seeking after new and improved developing agents, the promulgation of formulæ, and the advertisements of new varieties of dry plates and films.

Notwithstanding that so much has been already accomplished in this department, and is known and understood, it still remains a fact that many of the simple methods by which a defective or inharmonious negative can be improved and made available are not used to the extent they should be, on account of not being sufficiently known.

Now and then recourse is taken by the every-day worker to improve a negative by intensification, whether the proper thing to do or not, while others again look to the retoucher, no matter how good or incompetent he may be, to harmonise the existing defects.

Now as no one remedy will answer for every defect, it is proposed here to exemplify and explain, separately and in a practical manner, the various known processes for the improvement of a defective or unsatisfactory negative.

The most frequent defect in a negative consists of a veil or fog. This is usually caused by the use of too highly sensitive plates, together with extra light strong objectives, but it may also result from many other causes.

The above defect is divided into two classes, viz., plain fog and coloured fog.

Both varieties can be entirely removed, provided the proper methods are employed, which are different according to the kind of fog.

An ordinary fog, which certain makes of plates seem to be subject to, may be removed expeditiously and with certainty by the application of any slow-acting reducing medium, one of the best of which is the simple acid-fixing bath.

Sulphuric acid	1	drachm.
Hyposulphite of sodium	16	ounces.
Sulphite of sodium	2	„
Chrome alum	¾	ounce.
Warm water	64	ounces.

Dissolve the hyposulphite in forty-eight ounces of water, the sulphite of soda in six ounces of water, mix the sulphuric acid with two ounces of water, and pour slowly into the sulphite sodium solution, and add to the hyposulphite, then dissolve the chrome alum in eight ounces of water and add to the bulk of the solution, and the bath is ready.

Immerse the fogged negative in this bath, and allow it to act until the requisite clearness in the shadows is reached.

Of the numerous existing formulæ for the reduction of negatives, none offers the advantages for clearing fog and gives the results equal to what is known as Belitski's permanent green reducer; this is made as follows:—

Water	7	ounces.
Potassium ferric oxalate	2½	drachms.

When this is dissolved, add:—

Crystallised neutral sulphite of sodium	2	drachms.
Oxalic acid	40	grains.
Hyposulphite of soda	1½	ounces.

This even-acting reducer must be kept in corked bottles in the dark, as under the influence of light the ferric salt is reduced to ferrous. This solution may be used repeatedly, as, if care is taken, it keeps a long time.

Green, yellow, or red fog, however, are not to be removed by reduction, as they are caused by a peculiar condition of the reduced silver. It is, therefore, recommended to change the latter once again into a silver bromide, and then by suitable development obtain the desired grey-black argentic reduction, with corresponding clearness in the shadows. The procedure to obtain these results is a simple one, and the results are sure in *almost* every instance.

When we say *almost*, it must be taken into consideration that any discolouration arising from the oxidation of the developing agent will not yield to the above method, but must be treated by a method of its own.

To overcome the first defects, viz., green, yellow, or red fog, it is suggested to first place the dry negative in water for about ten minutes, so as to thoroughly soften the film, then place in a solution of—

Water	3½	ounces.
Bromide of soda	75	grains.
Bromine	45	„

This mixture is to be thoroughly mixed by shaking in a well-corked bottle. Place the negative in a tray, and then pour the solution over it; this must be done in the open air, as strong, noxious fumes are generated.

In this bath the negative bleaches out completely, and appears on the reverse as a positive. It is then to be well washed, after which it is to be redeveloped with a fresh solution of any developing formula. This can be done by daylight. According to the German writer, hydroquinone gives the best result for the final operation. The development is to be continued until the plate appears black, and by transmitted light appears grey-black. Reddish or brown tones are transitory only, and are not to be taken into account, as they disappear with continued development.

The time of development is of no moment, as it has no detrimental effect whatever, the only aim being to obtain the desired grey-black tone with the requisite clearness in the shadows.

When the redevelopment is complete, the negative should be washed for about two hours. It is to be noted that some brands of plates show a tendency, after being put through this treatment, to frill, or even peel off the glass; this is to be overcome by placing the negative in an alum bath for two minutes prior to the final washing. More certain results are, however, to be obtained by the use of a weak solution of chrome alum.

Ordinary yellow fog yields easily to treatment with a thiosinamine solution, which has less objectionable features than the above:—

Thiosinamine	5	drachms.
Citric acid	2½	„
Water	1	quart.

The negative is merely placed in the above until cleared; the result is permanent.

When the yellow discolouration is the result of oxydation of the developing agent the best procedure is that indicated by Dr. Liesegang. If resulting from the use of para-amido-phenol, immerse and bleach in a solution of oxalic acid, then expose the plate for two hours to bright sunlight without any previous washing.

Pyro stains may be easily removed with a solution of citrate of tin (*citronen saurem Zinn*), less thoroughly with a solution of sulphite of sodium.

Amidol fog can only be partially removed by the use of either of the two above solutions.

As the stannic salts are apt to act upon the gelatine film, it is best under all circumstances to avoid their use, and take recourse to other methods, even if not quite so effective, such as placing a blue glass in front of the negative in the printing frame, as the resulting green light will give better prints than can be obtained by printing merely through the yellow film.

We now come to another class of defect, such as a negative where, while there is no lack of detail, yet the high lights are too dense. Many are the suggestions that have been made to overcome this difficulty; the following have been tried and found practical.

The well-washed negative is to be treated either with the above bromising solution, or one of—

Hydrochloric acid	8	drops.
Bichromate of potash	30	grains.
Alum	15	„
Water	1	ounce.

With this solution a silver chloride is formed, which is not so apt to give sure results. As a substitute for the bromising solution previously given, the following formula has been suggested, as it does not evolve any noxious fumes:—

Bromide of potassium	1	drachm.
Bichromate of potash	30	grains.
Water	6	ounces.

The thoroughly bleached negative is to be slightly washed and then redeveloped with a good hydroquinone developer:—

A.	Hodroquinone	1	drachm.
	Sulphite of sodium	4	drachms.
	Acetic acid	1½	„
	Water	5	ounces.
B.	Carbonate of potassium	2	drachms.
	Water	2½	ounces.

For use two parts of A to one part of B.

* Translated and amplified by J. F. Sachse from the *Deutsche Photographen-Zeitung.*

The development is to be carried on only until the details in the shadows and half-tones are well brought out, while the high lights still appear light on the glass side, but by transmitted light show an harmonious density.

The negative is then to be washed for a short time and fixed in an ordinary fixing bath. By this method, either a soft or plucky negative can be obtained.

Another method recommended for harmonising under-exposed and hard negatives, and which has given good results, is one based upon the special properties of stained gelatine. The negative, after being dried, is placed in a weak aqueous solution of some blue-green pigment. The gelatine absorbs the colour in the same proportion as the silver has been reduced in the film. Consequently there is no absorption whatever in the highest lights, as most all the silver there is reduced, while in the clear shadows, where there has been little or no reduction, the colour is absorbed and the shadows are then lightened up and the contrasts lessened in the prints.

This process, with a slight modification, can be made available for the improvement of weak or thin negatives, viz.:—

Water	8 ounces.
Bichromate of potassium	2 drachms.

The negative is placed in this solution for four or five minutes, and is then taken out and dried (in the dark). When thoroughly dry, it is placed film side down on a piece of black cloth or paper and exposed to the day-light from 10 to 15 minutes according to circumstances.

Here the transparent places or shadows are influenced in such manner that the gelatine becomes insoluble, while the half-tones become so only in proportion to their density, and the high lights are not acted upon. The negative is now to be well washed and placed in a solution of India ink and water. Such parts as are not affected, *i.e.*, where there was a somewhat heavy deposit of silver, absorb the inky solution, while the partly illuminated tones absorb the tint proportionally, the deep shadows remaining as they were. When dry the pigment remains in the film as absorbed, and the intensification is a graduated one.

A general intensification of a negative can be accomplished by various methods. The mercurial intensifier, however, remains the most practical one for general purposes.

In cases where intensification is desirable, that will admit the smallest quantity of actinic rays, and where no penciling is contemplated, subjects as landscapes, architecture or interiors, a uranium intensifier has proved of greatest service. The advantages are that any existing fog in the negative is not aggravated, and then that it offers the possibility of reducing or of entirely removing the intensification at will. The solution is made as follows:—

A.	Water	3½ ounces.
	Uranium nitrate	15 grains.
B.	Water	3½ ounces.
	Red prussiate of potash	15 grains.
C.	Glacial acetic acid.	

For use, take A, 2 ounces; B, 2 ounces; C, 3 drachms.

As soon as the turbid mixture becomes clear, the dampened plate, which must have been well washed, is placed in the tray until the negative assumes an intense red-brown tone. It is then to be washed, only until the water ceases to run off in streaks. Prolonged washing reduces the intensification.

Partial intensification or reduction of a negative in many cases is practical, and an operation to be recommended. It is one which apparently is practised by but few operators. The process is so easy and requires so little preparation that it can be characterized as a chemical *retouché*.

The plate to be operated upon must first be moistened, not saturated, with water it must then be placed in a horizontal position on two carries—dry-plate boxes will answer—so that it will rest about three inches above the table, on which, beneath the plate, a piece of white cardboard or a mirror is placed, so that the action of the solution may be observed, and the effect checked as soon as the desired point has been reached.

A basin and glass of clean water should be within reach, together with some camel's-hair brushes, and the solutions in small wide-mouthed bottles. The latter should contain the usual bichloride solution for intensification, and several others with solutions of red prussiate of potash of various strengths, varying from 1: 15 to a concentrated one; also one of hyposulphite of soda, 1: 15.

When single portions are to be reduced, take a pencil, dip it in the weakest solution, and go carefully over the dense spot, at the same time take another pencil, dip it in the clear water, and go over the contour or edges of the place to be reduced, the process obviates sharp edges. If the weak solution does not act energetically enough, try the next stronger, and so on, observing the same conditions.

As soon as the desired effect is reached, quickly place the negative in the dish of water. To overcome any sharply defined contours, the water brush must be used. Should, however, sharp lines appear, they can be easily blended with a fine pencil, using a strong solution. To prevent the spreading of the reducing solution, the plate should be partly dry.

To intensify local portions of a negative, it is only necessary to apply to the spot the bichloride solution with a fine brush or pencil until the bleaching process has proceeded far enough. The plate is then laid in water for a short time, after which it is held over a bottle of strong ammonia, the fumes of which soon blacken the spot. Where larger surfaces are involved, a solution of sulphite of sodium may be used.

Where large surfaces are to be reduced, the potassium-ferric-oxalate reducer can be applied and blended with a brush and water.

Other methods for reduction can also be applied, as the shorter processes here given are subject to modification.

There is a word of caution, however, that is not to be forgotten, that all chemicals enumerated in these formulæ are poisonous, and too great care cannot be taken in their use.

In conclusion, we will now treat of a condition that sometimes happens to an otherwise perfect negative, namely, the breaking of the glass.

Broken negatives are easily restored, provided the film is intact. All that is necessary is to lay the broken negative, film side down, on a sheet of glass and warm it, then pour some Canada balsam on the broken negative so that some of that medium will flow into the cracks. Have another sheet of glass warm and in readiness, of exact size of the broken one, flow this with balsam and quickly place it on top of the broken negative, and press well down, so that any excess will ooze out at the sides; now lift from the bottom support and set away to dry. If carefully done, the negative will be as good as ever. J. Von Norath.

List of Members, resident in Madras, whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society, whenever they visit Madras.

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19207

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Dark Slide Recorder.

Shows at a glance which plates have been exposed. Prevents two pictures being taken on one plate.

Set of 6, Cash Rs. 3-6, Credit Rs. 3-13.

Nameit.

Prints the Letters on the Negative to perfection, so that each photo taken from the negative bears its own insignia in clear white, type printed characters, equal to any letter-press printing.

Cash Rs. 7-0, Credit Rs. 8-0.

Tylar's Window Shutters.

Is the best all round, shutter at a low price. It is always set—gives foreground a prolonged exposure—it is a simplicity itself—nothing to go wrong, and you can give time or instantaneous exposure.

2in. back, $1\frac{3}{8}$ aperture, Cash Rs. 5-0, Credit Rs. 5-12.
3in. „ $1\frac{7}{8}$ „ „ „ 8-0, „ 9-0.
4in. „ $2\frac{3}{8}$ „ „ „ 11-0, „ 12-8.

Tylar's Rebounding Shutters.

Is without doubt the simplest made, it is actuated by two elastic hands and is so constructed as to reduce all friction of parts as far as possible.

$\frac{1}{4}$ plate ... ... Cash Rs. 2-0, Credit Rs. 2-4
$\frac{1}{2}$ „ ... ... „ „ 3-0, „ „ 3-8
$\frac{1}{1}$ „ ... ... „ „ 4-8, „ „ 5-0

Thornton-Pickard Focal Plane Shutter.

For those who desire to obtain instantaneous Photographs of subjects having an extremely rapid movement, such as flying-birds, animals and men leaping, jumping, &c., &c., this is the best shutter. It gives a shorter exposure and passes a large percentage of light than any other form. Range of speed from $\frac{1}{20}$ to $\frac{1}{1000}$ of a second.

$\frac{1}{4}$ plate, Cash Rs. 45-0, Credit Rs. 50-0.

Tylar's Double Metal Dark Slides.

Can be fitted to any make of Camera at a small cost.

Set of 6 $\frac{1}{4}$-plate.
Cash Rs. 24, Credit Rs. 27.

Set of 3 $\frac{1}{2}$-plate withc arriers.
Cash Rs. 24-8, Credit Rs. 27-12.

Set of 3 $\frac{1}{1}$- plate with carriers.
Cash Rs. 35, Credit Rs. 40.

Bottles with Indestructibl Labels for Chemicals.

No. 1.—10oz. Narrow Mouth ...Potash Bromide, 10 per ce
„ 2. „ „ ...Developer.
„ 3. „ „ ...Ammonia.
„ 4. „ „ ...Pyro.
„ 5. „ „ ...Hydrokinone.

The above have white letters on white glass.
Price, Cash Rs. 2-8, Credit Rs. 3-0, each.

No. 6.—10oz. Wide Mouth ...Soda Acetate.
„ 7. „ „ ...Ammon. Bromide.
„ 8. „ „ ...Acid Citric.

No. 6 to 8 are blue letters on white glass.
Price, Cash Rs. 2-8, Credit Rs. 3-0, each.

No. 9.—4oz. Wide Mouth ...Silver Nitrate.
„ 10. „ „ ...Ammon, Sulpho-Cyanid

No. 9 and 10 are amber glass with white lett
Price, Cash Rs. 2-4, Credit Rs. 2-9, each

Pyro Bottles.

For Preserving and Measuring P
other Chemicals that are used in a
with spoon for Measuring.
The hollow glass stopper enclose
and prevents the action of the at
the contents.
Price, Cash Rs. 2-4, Credit R

Boxes for Storing

For Plates $4\frac{1}{4}$ x $3\frac{1}{4}$ to hold
Negatives numbe
„ $6\frac{1}{4}$ x $4\frac{3}{4}$ d
„ $8\frac{1}{2}$ x $6\frac{1}{2}$

Back

These are suita
fessionals. They
in distemper, a
7ft. 6in. high,
busts or thre
Ca

No

FRESH DRY PLAT

SUPPLIES RECEIVED FORTNIGH

	$4\frac{1}{4}$" x $3\frac{1}{4}$"		$6\frac{1}{4}$" x $4\frac{3}{4}$"		$8\frac{1}{2}$" x $6\frac{1}{2}$"	
	Cash. RS. A.	Credit. RS. A.	Cash. RS. A.	Credit. RS. A.	Cash. RS. A.	Credit RS.
WRATTEN & WAINWRIGHT'S						
Ordinary	......	......	......	......	6 2	
Instantaneous	2 0	2 4	......	......	7 6	
Drop Shutter	2 5	2 10	......	......	7 1	
ILFORD'S.—						
Ordinary	......	......	......	......		
Rapid	......	......	......	......		
Special Rapid ...	......	......	......	......		
Isochromatic (Medium)...	1 2	1 5	......	...		
THOMAS'S.—						
General	2 0	2 4	4 8			
Extra Rapid	1 0	1 2	3			

Mount

W. E. SMITH & CO.,

Chemists by appointment to the

AMATEUR ❖ PHOTOGRAPHIC ❖ SOCIETY ❖ OF ❖ MADRAS.

Just Received Fresh Supplies of

ILFORD PHOTOGRAPHIC PLATES,

ILFORD LANTERN PLATES,

…ORD PRINTING OUT PAPER IN PACKETS & ROLLS,

WRATTEN AND WAINWRIGHT'S PLATES.

☛ *Also a large Consignment of Photographic Sundries.*

…P. in Rolls of 2 Sheets … … … …	Rs.	1-12
do 6 Sheets … … … …	"	5-0
…n Packets, $4\frac{1}{4}$" x $3\frac{1}{4}$", 5" x 4", 6" x $4\frac{1}{2}$", $8\frac{1}{2}$" x $6\frac{1}{2}$, each …	"	1-4

… Universal Developer.

"REGISTERED"

…AGES OF THIS DEVELOPER ARE

… Amateurs who had never developed a plate before, have
…he first attempt.
…veloper for Chloride (transparencies) as also Bromide
…oper is the only developer that need be used for *all*

…ntrasts on cheap as well as expensive plates; no

…oper may be used repeatedly and until the

…per set.

… & CO.,

…S, · MADRAS.